BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	)	
	)	
SHELL OFFSHORE, INC.,	)	OCS Appeal Nos. 07-01 & 07-02
Kulluk Drilling Unit and	)	
Frontier Discoverer Drilling Unit	)	EPA REGION 10'S RESPONSE
	)	TO PETITIONS FOR REVIEW
OCS Permit Nos. R10OCS-AK-07-01	)	
R10OCS-AK-07-02	)	

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I. INTRODUCTION

On June 12, 2007, the Director of the Office of Air, Waste and Toxics for the U.S. Environmental Protection Agency ("EPA"), Region 10 issued two Outer Continental Shelf ("OCS") Air Quality Control Minor Permits under the Clean Air Act to Shell Offshore, Inc. ("Shell") to allow exploratory oil and gas drilling operations in the Beaufort Sea in Alaska. On July 16, 2007, the North Slope Borough ("NSB") filed a Petition for Review of these permits ("NSB Petition") with the Environmental Appeals Board ("EAB"). Restricting Environmental Destruction on Indigenous Lands, a Project of the Environmental Indigenous Network ("REDOIL"), Northern Alaska Environmental Center, Alaska Wilderness League, Center for Biological Diversity, and Natural Resources Defense Council (collectively, "REDOIL") filed a second petition on the same day ("REDOIL Petition"). Under 40 C.F.R. § 55.6, the procedures in 40 C.F.R. Part 124 apply to this proceeding.

II. FACTUAL AND PROCEDURAL BACKGROUND

On December 29, 2006, Shell submitted its initial permit applications to EPA, requesting that Region 10 issue OCS permits for two drilling units ("drill ships"). Permit Applications, NSB Ex. 1, 2.[1] EPA determined the applications were complete on February 2, 2007. Response to Comments, NSB Ex. 12, at 20. Shell submitted supplemental application materials on February 7, 2007, March 26, 2007, and March 29, 2007. Supplemental Materials, NSB Ex. 1a,

[1] This response brief uses the following conventions when citing to the administrative record for the Permit. If the document is in NSB's Excerpts to the Record, filed with its Petition for Review, it is identified first by a short descriptor (*e.g.*, "Permit" or "2001 Fact Sheet"), followed by the exhibit number assigned by NSB ("NSB Ex. __"), and then the page(s) or section(s) specifically referenced. All other exhibits referenced in this Response are included in Region 10's Excerpts to the Record, filed with this Response. This Response refers to each of these documents by the same number assigned to it in the Certified Index to the Record that Region 10 filed earlier ("EPA Ex. __").

1b, 1c, 1d, 2a. On March 30, 2007, Region 10 proposed to issue the two OCS permits and requested public comment. Draft Permits, NSB Ex. 5, 6. An information meeting and public hearing were held on May 8, 2007 in Nuiqsut, Alaska. Response to Comments, NSB Ex. 12, at 7. EPA issued both permits on June 12, 2007; Permit Number R10-OCS-AK-07-01 authorizes Shell to mobilize, operate, and demobilize the Kulluk drill ship, and Permit Number R10-OCS-AK-07-02 authorizes Shell to mobilize, operate, and demobilize the Frontier Discoverer drill ship, both in the outer continental shelf nearshore waters of the Beaufort Sea. Final Permits, NSB Ex. 10, 11. The permits authorize Shell to conduct exploratory drilling operations at the locations and during time periods designated by the Minerals Management Service.

Section 328(a) of the Clean Air Act, 42 U.S.C. § 7267, requires EPA to establish requirements to control air pollution from OCS sources located within 25 miles of States' seaward boundaries that are the same as onshore requirements. Therefore, EPA periodically updates the OCS Air Regulations in 40 C.F.R. Part 55 so they remain consistent with the requirements of the corresponding onshore area. On February 8, 2007, EPA amended Part 55 to update the provisions that pertain to OCS sources in the State of Alaska to match the state regulations that apply to emissions from OCS sources onshore. 72 Fed. Reg. 5936 (Feb. 8, 2007).

III. SCOPE AND STANDARD OF REVIEW

Pursuant to 40 C.F.R. § 124.19(a), the EAB will not ordinarily review a permit decision "unless the decision is based on either a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review." *In re Prairie State Generating Co.*, 13 E.A.D. --, slip op. at 13 (EAB, Aug. 24, 2006); *see also In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 126 (EAB 1999) (hereinafter "*Knauf I*"); 40 C.F.R. § 124.19. The preamble to 40 C.F.R. § 124.19 states that the "power of review should be only

sparingly exercised, [and] most permit conditions should be finally determined at the Regional level." 45 Fed. Reg. 33290, 33412 (May 19, 1980).

The burden is on the petitioner to demonstrate that there is clear error or an important policy consideration that warrants that the permit condition should be reviewed. *See In re BP Cherry Point*, 12 E.A.D. --, slip op. at 11-12 (EAB, June 21, 2005); *In re Three Mountain Power, LLC*, 10 E.A.D. 39, 47 (EAB 2001); *In re Steel Dynamics, Inc.*, 9 E.A.D. 740, 743 (EAB 2001). It is not enough that the petitioner merely repeat the objections that it made during the comment period. Instead, the petitioner must "both state the objections to the permit that are being raised for review and … explain why the permit decision maker's previous response to those decisions … is clearly erroneous or otherwise warrants review." *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 114 (EAB 1997); *see also BP Cherry Point*, 12 E.A.D. --, slip op. at 11-12.

Issues and arguments raised by a petitioner that are not raised during the public comment period will not be considered preserved for review without a demonstration that they were not reasonably ascertainable at the time. *See BP Cherry Point*, 12 E.A.D. --, slip op. at 14-15; *In re AES Puerto Rico, L.P.*, 8 E.A.D. 324, 335 (EAB 1999); *In re Masonite Corp.*, 5 E.A.D. 551, 585 (EAB 1994); *In re SEI Birchwood, Inc.*, 5 E.A.D. 25, 29 (EAB 1994); *see also* 40 C.F.R. §§ 124.13 and 124.19(a) ("Petitioners must demonstrate that any issues raised [on review] were raised during the public comment period … to the extent required by these requirements."). Issues must be raised during the public comment period to "ensure that the permit issuer has an opportunity to adjust its permit decision or to provide an explanation of why no adjustment is necessary." *AES Puerto Rico*, 8 E.A.D. at 335; *see also BP Cherry Point*, 12 E.A.D. --, slip op. at 14-15. If an issue was not properly preserved for review, the EAB will generally deny review of the issue. *Id.*

The EAB "assigns a heavy burden to petitioners seeking review of issues that are essentially technical in nature." *In re Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 334 (EAB 2002) (hereinafter "*D.C. MS4*"); *In re City of Moscow, Idaho,* 10 E.A.D. 135, 142 (EAB 2001); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567 (EAB 1998), *petition for review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). When presented with technical issues in a petition, the EAB determines whether the record demonstrates that "the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record." *In re Peabody Western Coal Co.*, 12 E.A.D. --, slip op. at 17 (EAB, Feb. 18, 2005). If the EAB determines that the Region gave due consideration to comments received and adopted an approach in the final permit decision that is rational and supportable, the EAB typically gives deference to the Region's position. *Id.*; *City of Moscow,* 10 E.A.D. at 142.

IV. ARGUMENT

Petitioners raise five primary issues on appeal. Both Petitioners argue that Shell's drill ships are major sources and therefore Region 10 should have issued prevention of significant deterioration (PSD) permits rather than minor air quality permits to operate. NSB also asserts that Region 10 improperly calculated the drill ships' potential to emit and the permits do not effectively limit emissions to less than the "major source" threshold, the modeling analysis was flawed, the length of the public comment period and the public hearing schedule precluded meaningful participation, and Region 10 failed to adequately address NSB's environmental justice concerns. For the reasons explained below, Petitioners' arguments are without merit. Petitioners failed to show the permit decisions were based on either a clearly erroneous finding

of fact or conclusion of law, or involve an important matter of policy or exercise of discretion that warrants review. Accordingly, the Petitions for Review should be denied.

A. Minor Source Permits

Petitioners claim that Shell's exploratory oil and gas activity is a major source subject to the Clean Air Act's prevention of significant deterioration ("PSD") requirements and therefore should not have been issued minor source permits. NSB Petition, at 13-14; REDOIL Petition, at 12. They argue that under the statute and our regulations, PSD applicability for OCS sources must be determined for each ship based on sum of emissions across all drill sites that a ship explores in a year. Accordingly, because the total emissions across all drill sites exceed the 250 tons per year PSD threshold, they argue that Region 10 erred in not requiring major source PSD permits. Region 10, however, determined that based on the statutory purpose, the definition of OCS source in 40 C.F.R. § 55.3, and the specific scenario presented in this permitting action, it is reasonable to view the operations at each drill site as a separate source for permitting purposes and to provide a 500-meter buffer zone. Because the total emissions at each drill site are less than the 250 tons per year PSD applicability threshold, the PSD requirements do not apply.

1. Region 10 Properly Determined that the Definition of OCS Source Does not Require Aggregation Across All Drill Sites

Shell intends to conduct exploration activity with two separate drill ships – the Kulluk and Frontier Discoverer – at multiple drills sites within a number of three-square-mile lease blocks located in the Beaufort Sea. As reflected in the permit application, Shell anticipates that each drill ship may operate at up to three separate drill site locations each drilling season. Kulluk Permit Application, NSB Ex. 1, at 1. In Petitioners' view, each drill ship meets the definition of

OCS source in 40 C.F.R. § 55.2,[2] and therefore statutorily must be permitted as a separate PSD source based on the total emissions from all drill sites where it is operating. That is, in NSB's view, the definition of an OCS source supplants the regulatory PSD definition used to determine which pollutant emitting activities constitute a "Major Stationary Source."

Unlike the Petitioners, EPA reads the statutory and regulatory definition of OCS source as merely prescribing all of the pollutant emitting activities that are subject to federal and state regulations. *See* 40 C.F.R. §§ 55.13 – 55.14. NSB's position, that EPA is required to aggregate emissions from various OCS sources prior to determining applicability because of the definition of OCS source, however, assigns significance to the definition of OCS source that is not required by either the statue or the applicable implementing regulations. The regulations are clear that the drill ship *can* be an OCS source. The ship becomes an OCS source, and therefore subject to the OCS regulations *only* when it is attached to the seabed in the OCS and not when it is merely traveling between various drill sites within the Beaufort Sea. 40 C.F.R. § 55.2; Statement of Basis, NSB Ex. 3, at 5. In addition, the definition of "source" in the OCS regulations serves only to identify the set of air pollution emitting activities occurring in the OCS that are subject to regulation 40 C.F.R. Part 55. The definition is not intended to prescribe applicability of the federal or state regulations, including specifically in this permitting action, PSD applicability.

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[2] The OCS regulations define "OCS source" as "any equipment, activity or facility which:

(1) Emits or has the potential to emit any air pollutant;
(2) Is regulated or authorized under the Outer Continental Shelf Lands Act ("OCSLA") (43 U.S.C. § 1331 *et seq*.); and
(3) Is located on the OCS or in or on waters above the OCS.

This definition shall include vessels only when they are:

Permanently or temporarily attached to the seabed and erected thereon and used for the purposes of exploring, developing or producing resources therefrom, within the meaning of section 4(a)(1) of OSCLA (43 U.S.C. § 1331 *et seq.)*
40 C.F.R. § 55.2

Because the regulations specifically include a vessel in the definition of an OCS source only when it is "attached to the sea bed," Region 10 properly determined that the source, for purposes of complying with federal requirements as prescribed in 40 C.F.R. § 55.13, and more specifically for use as the basic unit of analysis in determining PSD applicability, is the "equipment, activity, or facility" when the drill ships are attached to the sea floor at particular drill sites. Prior to Section 328 and Part 55, the Clean Air Act was not applicable on the OCS. Today, it is applicable on the OCS, but only to the defined set of emissions generating activity, i.e., the OCS source. NSB asserts that the OCS source definition should be interpreted broadly to include "any 'equipment, activity or facility' on the OCS that pollutes and is regulated or authorized by the OCS, irrespective of the narrowing language contained in the definition and irrespective of the federal or state program that will be applied. According to NSB, because each ship is the "same equipment" that is polluting at various drill sites, all the emissions from that "equipment" should be aggregated prior to determining the applicable federal or state requirements. That is, in NSB's view, the definition of an OCS source replaces the regulatory PSD definition used to determine which pollutant emitting activities are subject.

Neither Congress nor EPA, however, intended for the OCS definition of "source" to revise or expand the definition of "source" with respect to implementation of any of the federal or state requirements, including the definition of "stationary source" in the new source review ("NSR") permitting programs. In fact, the legislative history repeatedly refers to creating a regulatory program within 25 miles of the state's seaward boundary that mirrors those regulations on the corresponding onshore area. Legislative History, EPA Ex. G-1. *See, also*, 57 Fed. Reg. 40792 (Sept. 4, 1992). In the Response to Comments, Region 10 states that it is not wholly replacing the term "stationary source with the term "OCS source" in the context of

administering the OCS air regulations. Response to Comments, NSB Ex. 12, at 58. Furthermore, Region 10 considers the fundamental concept of a "building, structure, facility or installation" applicable on OCS. As discussed in the subsequent section, Region 10 did not find that the PSD regulations required aggregation across drill sites.

Thus, because neither Section 328 of the Clean Air Act nor 40 C.F.R. Part 55 requires that EPA aggregate emissions from OCS sources across drill sites and drill ships, it was reasonable for Region 10 to determine that such aggregation would not be required in this case unless aggregation would be required under a traditional interpretation of the PSD regulations regarding source determinations.

2. Region 10 Properly Determined that the Definition of PSD Source Does not Require Aggregation Across All Drill Sites

Under the applicable PSD regulations, three criteria are used to determine what activities should be aggregated to constitute a single source for PSD applicability purposes: (1) a common owner or operator; (2) the same SIC code; and (3) located on one or more contiguous or adjacent property.[3] Because there is no dispute that all of exploratory activities at issue in these permits

[3] The definition of "stationary source" in Alaska is defined by reference to 40 C.F.R. § 51.166(b) which defines stationary source as any "building, structure, or installation which emits or may emit a regulated NSR pollutant". Furthermore, pursuant to Ak. Stat. 46.14.990 and 18 AAC 50.040(h)(4)(B)(iii) of the State of Alaska Requirements Applicable to OCS Sources, December 3, 2005,

> (4) "building, structure, facility, or installation" has the meaning given in 40 C.F.R. 51.166(b) except that it includes a vessel
>
> (A) that is anchored or otherwise permanently or temporarily stationed within a locale;
>
> (B) upon which a stationary source or stationary sources are located; not including stationary sources engaged in propulsion of the vessel; and
>
> (C) that is used for an industrial process, excluding a tank vessel in the trade of transporting cargo; in this subparagraph, "industrial process" means the extraction of raw material or the physical or chemical transformation of raw material in either composition or character;

are under Shell's control and located within the same SIC code, Petitioners focus on the terms "contiguous" or "adjacent" to argue that all the emissions from all drill sites must be aggregated to determine if PSD applies to Shell's drilling activity. Petitioners contend that the Region's determination that emissions did not need to be aggregated was erroneous because the Shell lease blocks are "contiguous or adjacent" to each other and therefore emissions from all drilling activity in these blocks must be aggregated. However, Petitioners fail to recognize that the Region reasonably concluded that in this case, the proper starting point for the PSD analysis was the drill site, rather than the lease block. As explained above, the drill ships only become OCS sources when they are actually tethered to the seabed at a particular drill site. Thus, CAA requirements, including PSD, only become applicable to the emissions generated at each particular drill site. Given this unique statutory structure, and other factors discussed below, the Region's determination that the drill site was the property for PSD applicability purposes was appropriate.

Rather than recognizing that Region 10 has determined that the property at issue is the actual drill site where the drill ships are operating, Petitioners argue that each three-square-mile lease block is the "property" and that "contiguous or adjacent property" includes lease blocks

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40 C.F.R. § 51.166(b)(6) states:

> (6) Building, structure, facility, or installation means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same Major Group (i.e., which have the same two-digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement (U.S. Government Printing Office stock numbers 4101–0066 and 003–005–00176–0, respectively).

that are physically connected at a point or along a boundary. NSB Petition, at 20. But contrary to Petitioners contention, these terms are not unambiguous and are subject to appropriate interpretation implementation consistent with the purposes of the regulations.

First, contrary to Petitioner's claim, the "property" is not unambiguously the "lease block." Not only is the term property subject to multiple meanings, but Petitioners' position fails to recognize the nature of the property interest conveyed by the lease or the specific statutory structure under which OCS sources operate. *See* Section IV.A.1, *supra*. Given these unique circumstances and the absence of any regulatory language dictating a contrary result the Region's determination that the individual drill sites constitutes the property was appropriate.

Second, even assuming that Petitioner's were correct that the lease blocks were the "property", the plain meaning of the term "contiguous" does not dictate that all lease blocks that are touching must be considered "contiguous" within the meaning of the OCS and PSD regulations. Petitioners rely on *Safe Air For Everyone, v. U.S. EPA*, 488 F.3d 1088 (9th Cir. 2007) (hereinafter "*SAFE*"), to assert that Region 10 must interpret the applicable regulations in accordance with the meaning they give to "contiguous" and thus aggregate all emissions from touching lease block. NSB Petition, at 21. Petitioners' reliance is misplaced. Not only is the property at issue in this case the individual drill sites and not the lease blocks, but unlike the situation in the *SAFE* case, EPA has clearly expressed its administrative intent regarding how to interpret the terms "contiguous" and "adjacent." *See Id.* at 1097 (recognizing that that the plain language of a regulation is not controlling if "clearly expressed [administrative] intent is to the contrary…" (citations omitted)).

Following the direction set forth in *Alabama Power Co. v. Costle*, 636 F.2d 323, 397 (D.C. Cir. 1979), EPA adopted a definition of PSD source that sought to: (1) fulfill the purposes

of the PSD program; (2) approximate a common sense notion of "plant"; and (3) avoid aggregating pollutant-emitting activities that as a group would not fit within the ordinary meaning of "building," "structure," "facility," or "installation." 45 Fed. Reg. 52675 at 52695-61980 (Aug. 7, 1980) (discussing definition of PSD "source"). In so doing, EPA explained that was "unable to say precisely at this point how far apart activities must be in order to be treated separately. The Agency can only answer that through case-by-case determinations." *Id.* at 52695. However, EPA did note that it would not treat all the pumping stations along a single pipeline as one PSD source. *Id.*.

More recently, the Agency also expressed its interpretation of these terms with specific regard to PSD source determinations in the oil and gas industries. EPA Guidance on Source Determinations for Oil and Gas Industries, EPA Ex. F-25. EPA's Oil and Gas memorandum suggested that proximity, i.e., "the physical distance between two activities," can be "*the most informative factor* in determining whether two activities are contiguous and adjacent" and that it is possible to find "two pollutant emitting activities to be separate sources when they are located far apart irrespective of the presence of physical connections and operational dependence between the sites." *Id.* at 3 (emphasis added). In this case, Region 10 not only determined that many of these drill sites were not in close proximity to one another, but they also did not share physical connections or operational dependence. The guidance further suggests aggregating two or more surface sites only if the surface sites are under common control and are located in close proximity to each other. *Id.* at 1.

Region 10's application of the term "continuous" and "adjacent" in these permits is reasonable and is based on clearly expressed agency intent. Shell's lease blocks stretch over hundreds of miles along the Alaska North Slope, and a single lease block covers some 5,760

acres of open water. Original Applications, NSB Ex. 1 and 2, (*see* maps at 2 indicating the numerous lease blocks held by Shell). A drill ship, on the other hand, occupies just a few acres of a lease block at a single time. The actual emissions-generating activity at a drill site occurs on a very, very small fraction of Shell's entire lease area. Region 10 also determined that even if the two drill ships are operating within the same lease block, the ships could still be separated by a number of miles. Drill ships do not share a physical connection, and operate completely independently of each other. Likewise, each drill ship's operation is entirely independent from one drill site to the next. Accordingly, it was appropriate for Region 10 to determine that the pieces of property at issue in the PSD applicability determination were the individual drill sites explored by the two ships and thus that the emissions should only be aggregated if they occurred at the same drill site or at "contiguous or adjacent" drill sites, which Region 10 determined to be those sites within close proximity of one another.

Given that the terms "continuous" and "adjacent" within EPA's definition of stationary source are meant to support a definition of source that is consistent with the "common sense notion of a plant," it is reasonable to define oil and gas exploration activities undertaken at the same drill site or in close proximity to one another as "contiguous." NSB would have EPA aggregate emissions across hundreds of miles and multiple airsheds to determine NSR applicability and renders as moot the "common sense notion of plant." In fact, EPA has previously stated that in determining which dockside activities of ships at terminals should be considered in the PSD major stationary source applicability "to treat *all* of the activities of a ship…[at] a terminal would violate any common sense notion of 'building,' 'structure,' 'facility,' or 'installation.'" 45 Fed. Reg. 52675 at 52696 (Aug. 7, 1980) (emphasis in original). Nothing in the statute, legislative history, regulation, or preamble to rulemaking announces that EPA is

abandoning its consideration of proximity in determining the extent of the stationary source. It is not reasonable to determine that all exploration activities occurring over large geographic areas at different drill sites with different ships are "contiguous" and "adjacent" within the meaning of a PSD applicability determination. Because aggregation of such geographically dispersed activities simply defies the common sense notion of a PSD source, Region 10 reasonably concluded that only those emissions occurring at drill sites within close proximity of one another would be aggregated for purposes of PSD applicability.

3. It is Reasonable for EPA to Issue Shell Two Minor Source Permits for Drilling Activity Separated by More Than 500 Meters.

Petitioners assert that even if Region 10 could treat separate drill sites as individual sources it is arbitrary to rely, without any justification, on a 500-meter limit as the sole criterion to determine that pollution emitting activities are not contiguous or adjacent. NSB Petition, at 24. Contrary to Petitioners' claim, Region 10 did justify the 500-meter limit. Statement of Basis, NSB Ex. 3, at 10; Response to Comments, NSB Ex. 12, at 58-60. In this case Shell requested that Region 10 aggregate emissions occurring within the same 52-week period and generated by equipment located at separate well sites but within 500 meters of one another.[4] Response to Comments, NSB Ex. 12, at 60. Region 10 considered Shell's requests and determined that the 500-meter threshold is reasonable in this case, based on EPA's interpretation of what constitutes the term "PSD stationary source"(especially with regard to oil and gas

[4] Response to Comments, NSB Ex. 12, at 68. The inclusion of support vessels in determining PSD applicability for a given drill ship operating at a given drill site is not influenced by the 500-meter threshold. Additionally, emissions from support vessels within 25 miles of a drill ship conducting exploration activity at a drill site will be counted so as to determine compliance with the 245 tpy NO_X emissions limit.

activities), regulation on the corresponding onshore area, the allowable air emissions contained in the permits, and Shell's operational scenarios.

Region 10 appropriately determined the extent to which Shell's activities are contiguous and adjacent in the context of implementing stationary source permitting regulations of the Alaska Department of Environmental Conservation ("ADEC"). As explained above, the definition of the PSD source in this instance is consistent with the corresponding on shore regulations in Alaska. Furthermore, Alaska, the corresponding onshore permitting authority, has not objected to permitting Shell's activity as minor sources nor has it disagreed with the decision to aggregate emissions from drill sites located within 500 meters of each other. ADEC Comments, NSB Ex. 25 (ADEC did not object to this approach).

In determining whether the activities are contiguous or adjacent for PSD applicability purposes, it is necessary to first identify each pollutant emitting activity. Given the unique circumstances presented here, Region 10 determined that it is appropriate in this case to consider the "OCS source" –i.e. the drill ship at a specific drill cite as the starting point from which to determine whether other pollutant emitting activities are contiguous or adjacent and therefore should be aggregated under PSD. Statement of Basis, NSB Ex. 3, at 11. Region 10 determined that the pollutant emitting activity subject to regulation under Part 55 is located at the drill ship attached to the seabed at a particular drill site, not the entire lease block. It is not appropriate to aggregate drill ship emissions occurring above all contiguous or adjacent lease blocks because it is the proximity of the air pollutant emitting activity on the surface of the OCS that is relevant. Essentially, relying upon lease blocks to determine what is contiguous or adjacent under PSD major source criteria does not result in a common sense notion of plant. Adopting the approach NSB advocates would result in defining nondependent activities separated by miles of open

water as a single stationary source. Thus, as explained above, independently operating drill ships operating at separate drill sites across multiple lease blocks covering many square miles of the Beaumont Sea are unlikely to be considered a contiguous single PSD source.

On the other hand, Region 10 determined in this case that drill ship activity within 500 meters is in close enough proximity to be considered a single source. In making this decision Region 10 considered Shell's owner requested limit to aggregate emissions from drill sites within 500 meters of each other. Such an approach is not only reasonable under a common sense notion of a PSD source, but it is also reasonable when compared with PSD source determinations made by other permitting authorities, including Oklahoma and Louisiana, where they separate pollutant-emitting activities from the oil and gas industry at not aggregated when they occur located outside a quarter-mile radius.[5] *See*, Oklahoma Permit Information, EPA Ex. F-6, at 2; Louisiana Permit Document, EPA Ex. 14, at 1.

For all these reasons, Petitioners NSB and REDOIL have not demonstrated that EPA Region 10 made clear error in deciding to issue Shell two minor source permits for drilling activities separated by more than 500 meters.

4. Region 10's Interpretation of the Aggregation Provisions is Consistent with the Clean Air Act.

Section 328 of the Clean Air Act, 42 U.S.C. § 7627, was designed to ensure that air pollution from OCS activities does not degrade the air quality in coastal regions of the United States. S. Rep. No. 228, 101, 1st Sess. (1998), EPA Ex. G-1, at 77. The purpose of Section 328 of the Clean Air Act is not, as Petitioners claim, to "ensure [] that OCS equipment, activities and

[5] Since 500 meters is equal to about 0.31 miles (s*ee* http://www.nodc.noaa.gov/dsdt/ucg/#Length), Shell's permits, based on a 500-meter standard, are slightly more stringent.

facilities undergo PSD review requiring compliance with BACT emission requirement," NSB Petition, at 29, or to "specifically require[] the PSD program apply to these "OCS sources." REDOIL Petition, at 12. It is clear that Congress recognized that OCS sources contribute a significant amount of air pollution and that it intended that emissions from OCS sources be regulated to protect the National Ambient Air Quality Standards ("NAAQS") consistent with the NSR and PSD requirements for sources located onshore. S. Rep. No. 228, 101, 1st Sess. (1998), EPA Ex. G-1 at 76-77. However, Congress intended that these goals were to be achieved by applying the same air quality protection regulations as would apply if the OCS sources were located within the corresponding onshore area. *See* S. Rep. No. 228, 101, 1st Sess. (1998), EPA Ex. G-1 at 77. It did not indicate that the PSD requirements must be applied to all OCS sources.

Moreover, another goal of the OCS statute was to bring about a more equitable regulatory playing field between oil and gas activities occurring between onshore sources and OCS sources within 25 miles of States' seaward boundaries. *Id*. at 77, *see, also* Proposed Outer Continental Shelf Regulations, 56 Fed. Reg. 62775 at 63775 (Dec. 5, 1991). The State of Alaska has permitted drilling activity in onshore areas on a case-by-case basis, and there is no evidence that ADEC always aggregates onshore oil and gas exploration activity in the manner Petitioners advocate. In fact, ADEC comments to EPA on this proposed permitting action stated that "the Shell Offshore, Inc. exploration plan will be consistent with Alaska Air Quality Statutes and Regulations" and did not raise concerns with regard to EPA's aggregation decision. ADEC Comment Letter, NSB Ex. 25. Therefore, Petitioners have not demonstrated that Region 10's decision to permit on a drill site basis is inconsistent with the State of Alaska's approach to permitting oil and gas activity. Rather Region 10's decision to permit on a drill site basis is consistent with Congressional intent to treat onshore and offshore facilities in a similar manner,

while aggregation as Petitioner advocates would be contrary to Congressional intent to regulate the OCS pollution consistent with the requirements in the corresponding onshore area.

Petitioner also suggests that this permit improperly treats the Kulluk drill ship differently than it was treated in 1994 when EPA issued a PSD permit issued to ARCO. NSB Petition, at 31. Specifically, on December 14, 1993, Region 10 issued a PSD permit to ARCO to operate the Kulluk in the Beaufort Sea. ARCO Permit, EPA Ex. F-4. The ARCO permit was based on the application ARCO submitted in which ARCO estimated NO_x emissions of 2,311.9 tons over a four-month period from mid-July to mid-November. ARCO Permit Application, NSB Ex. 34. Based on expected operating conditions ARCO essentially predicted NO_x emissions of 578 tons at each drill site. Response to Comments, NSB Ex. 12, at 57. Thus, in that permitting action, even if the Kulluk's emissions had been calculated on a drill site by drill site basis, the emissions still would have been greater than 250 tons per year required for a PSD permit as a major source. In contrast, Shell specifically requested limits on the Kulluk operations to 245 tons per year from each drill site and is committing to generate less than 245 tons of NO_x per drill site. Response to Comments, NSB Ex. 12, at 57. Accordingly, the 1993 ARCO permit is not determinative of the permitting outcome in this case.

Applicability determinations, and PTE calculations, should be made on a case-by-case basis. Region 10's determination to recognize Shell's Beaufort Sea exploration activity as a series of minor sources is based on Shell's specific operation parameters and commitments and is permissible under the OCS Air Regulations and Section 328 of the Clean Air Act. In this instance Petitioners have failed to demonstrate that Region 10's decision to permit Shell's activity as a minor source rather than as a major source is based on either a clearly erroneous finding of fact or conclusion of law or that it involves an important matter of policy or exercise

of discretion that warrants review. Therefore, Petitioners request for review of this issue should be denied.

B. Potential to Emit

NSB claims that Region 10 improperly relied on information not in the administrative record, incorrectly calculated the sources' potential to emit, did not require submission of all required application information, failed to impose practically enforceable permit limits, and failed to impose sufficient monitoring, recordkeeping, and reporting in the permits. NSB Petition, at 33-53. As explained below, each of these arguments is without merit, and therefore the EAB should deny review.

1. Region 10 Provided the Public with the Information Necessary to Evaluate Emissions.

Shell's permit applications included a request that Region 10 establish owner-requested limits on its potential to emit nitrogen oxides (NO_x) and sulfur oxides (SO_x) to less than the 250 tons per year PSD threshold so that each source would only need a minor source permit.

NSB claims that Region 10 failed to identify all materials submitted by Shell in support of its potential to emit (PTE) calculations and make them reasonably available for public review. NSB Petition, at 34. Specifically, NSB notes that a March 8, 2007 email from Shell to Region 10 was not referenced in the publicly available list of documents in the administrative record for the draft permit. The submittal, entitled "Projected Fleet Activity Information," contained information regarding projected operating hours and loads for specific emission units that were used in Shell's emission calculations. March 8, 2007 Submittal, EPA Ex. E-23. NSB asserts that the information in the March 8, 2007 submittal was essential to its evaluation of Shell's PTE calculations and the owner-requested limits included in the draft permits and should have been identified as part of the administrative record during the public comment period. NSB

Petition, at 36. NSB further asserts that because it did not receive the information in the March 8, 2007 submittal until it requested the full administrative record, which NSB received five days before the deadline for filing petitions for review, its ability to review and comment on the draft permit and to prepare its appeal were compromised. NSB Petition, at 37.

The March 8, 2007 submittal was included in the administrative record for the permits, although it was not referenced in the statement of basis for the draft permits. Importantly, the information in the March 8, 2007 submittal was neither legally nor technically necessary for the public to meaningfully review and comment on the draft permits or for NSB to prepare its petition for review. During the public comment permit, Region 10 made Shell's application, Region 10's statement of basis containing its analysis of the application, and copies of the draft permits available in several local city offices and post offices and on Region 10's website. Notices to Alaska Native Villages, EPA Ex. C-6, C-7; Response to Comments, NSB Ex. 12, at 78-80. Although the information in the March 8, 2007 submittal provided additional detail on the emission calculations, the basic information regarding the emission calculations was available to the public during the public comment period as part of the application materials and the statement of basis. Appendix B to the applications contained, on a unit-specific basis, projections for operating hours and fuel usage. The March 8, 2007 submittal broke down these variables into the particular tasks needed to drill a hole. Permit Applications, NSB Ex. 1, 2, Appendix B; March 8, 2007 Submittal, EPA Ex. E-23. Thus, the information in the March 8, 2007 submittal, while useful in clarifying and explaining the basis for the emission calculations, did not change the calculations or the basis for the calculations. *Cf. Akpan v. Koch*, 75 N.Y.2d 561, 573-74 (1986) (holding that "[t]here is no requirement that [an environmental impact statement] contain all the raw data supporting its analysis so long as that analysis is sufficient to

allow informed consideration and comment on the issues raised"). Moreover, NSB fails to show how the March 8, 2007 submittal requires reevaluation of the emission limits at issue.

NSB's reliance on *Sierra Club v. Johnson*, 436 F.3d 1269, 1280 (11th Cir. 2006), is misplaced. In that case, the permitting authority failed to notify an entire category of potentially interested persons of the issuance of the draft permit itself, and of the opportunity to comment on the draft permit, which was clearly required by EPA regulations. The situation in *Johnson* is clearly distinguishable from this case, in which Region 10 properly notified the public of issuance of the draft permit and the public comment opportunity as required by 40 C.F.R. § 124.10, which is incorporated by reference in 40 C.F.R. § 55.6. In 40 C.F.R. § 124.9, incorporated by reference in 40 C.F.R. § 55.6, it states that the draft permit shall be based on the administrative record and specifies what is to be included in the administrative record. The requirements for the administrative record were satisfied in this case.

2. Region 10 Based the Owner-Requested Limits on Reasonable Emission Estimates.

NSB argues that Shell based its emission estimates on numerous assumptions that do not represent maximum emissions at design capacity and thus understate Shell's potential to emit. NSB Petition, at 7-38. As an example, NSB notes that Shell states it expects drilling operations to last about 30 to 45 days per site, but that Shell acknowledges that operations could continue for up to 60 to 75 days per site. NSB Petition, at 38. Because Shell based its emissions calculations on 59 days for deeper wells and 43 days for shallower wells, NSB asserts that Shell is not calculating its true maximum emissions.

As an initial matter, NSB incorrectly characterizes the reason why Shell provided the information regarding its emissions and operating projections. This information was not provided to estimate *maximum* emissions, without consideration of the owner-requested limits,

but rather, to estimate *maximum expected emissions considering* the owner-requested limits and to demonstrate that Shell is capable of complying with those emission limits. Although, as NSB notes, the term "potential to emit" is defined as "the maximum emissions of a pollutant from an OCS source operating at its design capacity," 40 C.F.R. § 55.2, the definition of PTE goes on to state that "[a]ny physical or operational limitation on the capacity of a source to emit a pollutant…. shall be treated as a limit on design capacity if the limitation is federally enforceable." *Id.* In the Shell OCS permits, Region 10 established owner-requested limits on the capacity of the OCS sources to emit pollutants (ORL/PTE limits). Kulluk Permit, NSB Ex. 10, at Conditions 7, 8, 9; Frontier Discoverer Permit, NSB Ex. 11, at Conditions 7, 8, 9. Thus, as discussed in the Response to Comments, NSB Ex. 12, at 40, and as provided in 18 AAC 225(a)(1),[6] the PTE of each OCS source is properly determined by taking into account the effect of the ORL/PTE limits on emissions from the source.[7] *See* Order Responding to Petitioners' Request that the Administrator Object to Issuance of a State Operating Permit to Orange Recycling and Ethanol Production Facility, Pencor-Masada Oxynol, LLC (April 8, 2002), at 4-5 (hereinafter "*Masada II*").[8]

[6] This regulation is incorporated by reference in 40 C.F.R. § 55.15, Appendix A.

[7] NSB's claim that the ORL/PTE limits are not enforceable as a practical matter is discussed in Section IV.B.3 below.

[8] The full text of the Administrator's April 8, 2002 Order is available at http://www.epa.gov/region07/programs/artd/air/title5/petitiondb/petitions/masada_decision2002.pdf.

NSB's arguments about the accuracy and reliability of the emission estimates used in developing the ORL/PTE limits, NSB Petition, at 38-40, are also misplaced.[9] Because the operating predictions were provided for the purposes of showing that Shell is capable of complying with the ORL/PTE limits, rather than for the purpose of calculating Shell's PTE absent the effect of the ORL/PTE limits, there is no need for the assumptions to be based on worst-case scenarios. None of the specific technical defects alleged by NSB negate Region 10's basic conclusion in issuing the permits; the emissions estimates provided by Shell are sufficiently representative of the source's projected operations as to support issuance of owner-requested permit limits on PTE. Response to Comments, NSB Ex. 12, at 24.

Region 10 acknowledges that there is a certain level of uncertainty associated with the emission factors used at the time of permit issuance to estimate emissions from many of the emission units comprising Shell's operations because the factors are based on AP-42[10] (which are generally industry averages) and vendor data. This is often true of any permit, however, because permits are typically issued before a source begins operations and the source can provide source-specific information. Importantly, the permits do require that Shell conduct stack tests of the major emitting units within 24 days of commencing operation at the first drill site to develop source-specific emissions factors. Kulluk Permit, NSB Ex. 10, at Condition 8; Frontier Discoverer Permit, NSB Ex. 11, at Condition 8. The units subject to the stack testing requirements in the permits are projected to make up more than 90% of the emissions from the

[9] Because estimation of emissions is clearly an issue of a technical nature, as discussed in Section III above, Region 10 is entitled to particular deference on this issue.

[10] USEPA AP-42 Compilation of Air Pollution Emission Factors (AP-42) (Available at http://www.epa.gov.ttn/chief/ap42/>).

OCS sources as a whole.[11] Once the stack tests are performed, compliance with the ORL/PTE limits will be based on the emission factors derived from the stack tests. Kulluk Permit, NSB Ex. 10, at Condition 8.1.b(ii); Frontier Discoverer Permit, NSB Ex. 11, at Condition 8.1.b(ii). Thus, to the extent that the source-specific emission factors are higher than the AP-42 emission factors and vendor data used to establish the ORL/PTE limits, Shell will need to adjust its operations accordingly.

In short, although a facility must make a credible effort to project what its emissions will be after it completes construction and commences operation, it is simply not possible to calculate precisely its emissions until the facility is operational. That is particularly true in a case such as this, where the effects of weather and other natural conditions in the Beaufort Sea have the potential to impact emissions. Thus, the mere fact that the ORL/PTE limits were derived using AP-42 emission factors does not render the ORL/PTE limits inadequate when, as here, actual compliance with the limits will be determined using source-specific emission factors for the units comprising at least 90% of all emissions. Again, to the extent that the source-specific emission factors are higher than the AP-42 emission factors, the ORL/PTE limits serve to constrain Shell's operations to keep emissions below the major source threshold.[12] *See* Order Responding to Petitioner's Request that the Administrator Object to Issuance of a State Operating Permit to Orange Recycling and Ethanol Production Facility, Pencor-Masada Oxynol, LLC (May 2, 2001),

[11] For other units not thought to contribute significantly (which Region 10 believes will represent less than 10% of all emissions from the OCS sources as a whole), the permits do not require stack testing and instead rely upon AP-42 emission factors and vendor data throughout the permit term for establishing and determining compliance with the ORL/PTE limits.

[12] On the other hand, it is also possible that Shell has overestimated emissions. To the extent that its emissions are actually less than Shell projected, the ORL/PTE limits afford Shell greater flexibility to operate while still remaining a minor source.

at 24 (Masada I).[13] In this way, the limits themselves are not critically sensitive to the accuracy of the pre-operation projections of emissions.[14]

In short, in issuing the permits, Region 10 determined that the emission estimates provided by Shell provide a reasonable basis for determining that the ORL/PTE limits can be met by the source operating as planned. Contrary to NSB's assertions, the potential for uncertainty in Shell's emission estimates does not necessarily require that the ORL/PTE limits be set some level below the major source threshold in order to provide some margin of safety. *Masada I,* at 24-25; *Masada II,* at 7. As discussed in more detail in Sections IV.B.4 and IV.B.5 below, the monitoring, recordkeeping, and reporting imposed in the permits will provide reliable data to assure that Shell's emissions stay below the ORL/PTE limits established in the permits. Companies often accept restrictions in permits order to keep their PTE below major source thresholds, thus avoiding the more extensive review and permitting requirements that apply to major sources, including PSD. *See In re Peabody Western Coal Co.,* 12 E.A.D. --, slip op. at 13 (EAB, Feb. 18, 2005) ("In many cases, a source may seek to limit its PTE, if possible, to avoid potentially more burdensome regulation in the future. In order to accomplish this, a facility may ask the permitting authority to impose enforceable limits on the source's capacity to emit."). There is no reason Shell should be prevented from similarly limiting its emissions to below

[13] The full text of the Administrator's May 2, 2001 Order is available at http://www.epa.gov/region07/programs/artd/air/title5/petitiondb/petitions/masada_decision2000.pdf.

[14] On the other hand, if, as NSB insists, the ORL/PTE limits were comprised of a fuel limitation that was based on AP-42, then there would be reason to be concerned that actual emissions may exceed the ORL/PTE limits even if the source was complying with the fuel limit. Because these ORL/PTE limits are limits on total emissions, however, using source-specific emission factors will ensure that actual emissions remain below the PTE limit.

major source thresholds so long as the limits are enforceable as a practical matter and there is reasonable assurance that Shell is capable of continuously complying with the limits.

3. Shell's Application for Owner-Requested Limits Contains Sufficient Information to Support Issuance of the Permits.

NSB contends that Shell did not satisfy the procedural requirements for an owner-requested limit because Shell did not provide a calculation of both its PTE without consideration of the ORL/PTE limits and actual emissions, and thus failed to demonstrate the effect of the permit limits on its unrestricted PTE. NSB Petition, at 42.

The regulations do require an applicant to submit information on its actual emissions, its potential to emit, and the effect the ORL will have on the source's PTE. 18 AAC 59.540(j) and 18 AAC 50.225(b) (incorporated by reference in 40 C.F.R. Part 55, Appendix A). Because the Shell OCS sources have not yet operated, however, it is difficult to predict how "actual emissions" differ from "potential to emit." Federal regulations provide that actual emissions equal potential to emit for emission units that have not begun normal operation. *See* 40 C.F.R. § 52.21(b)(21)(iv) (incorporated by reference in 18 AAC 50.990(l), which in turn is incorporated by reference in 40 C.F.R. Part 55, Appendix A).

In addition, the regulations authorize the permitting authority to approve a minor permit establishing an ORL if the permitting authority finds that

> (A) the stationary source is capable of complying with the limit; and
> (B) the permit conditions are adequate for determining continuous compliance with the limit;

18 AAC 50.542(f)(8) (incorporated by reference at 40 C.F.R. Part 55, Appendix A).

As discussed in the Response to Comments, NSB Ex. 12, at 24, 43-44, 70-73, and Sections IV.B.2 above and IV.B.4 and IV.B.5 below, Region 10 determined in issuing the permits both that Shell is capable of complying with the ORL/PTE limits and that the permit

conditions are adequate for determining continuous compliance with the ORL/PTC limits. Although Region 10 could have requested that Shell provide additional information in its permit application regarding its unrestricted PTE,[15] Region 10 determined that this information was not necessary to process Shell's permit applications and issue the permits. Response to Comments, NSB Exhibit 12, at 19-20.

Contrary to NSB's unsupported assertion, the fact that Shell did not provide information regarding its unrestricted PTE does not have any bearing on whether the ORL/PTE limits in the permits are sufficiently enforceable to restrict Shell's PTE to below major source thresholds. It is not necessary to know a source's unrestricted PTE in order to establish an enforceable limit on PTE and to ascertain that the source is capable of continuously complying with the limit. *Masada I,* at 24-25.

4. The Owner-Requested Limits are Federally and Practically Enforceable.

Although NSB concedes that the ORL/PTE limits are "federally enforceable," that is, contained in a permit that can be enforced by EPA, the State of Alaska, and citizens, NSB asserts that the ORL/PTE limits are blanket caps on NO_x emissions that are not enforceable as a practical matter. NSB Petition, at 43. NSB asserts that only PTE limits that include physical or operational restrictions such as installing pollution control equipment, operating within parameters that decrease emissions, restrictions on hours of operation, or restrictions on fuel quality and quantity, are practically enforceable, citing to *United States v. Louisiana Pacific Corp.*, 682 F. Supp. 1122, 1131-1133 (D. Colo. 1987) and EPA's June 13, 1989 Guidance on Limiting Potential to Emit in New Source Permitting. 1989 Guidance, NSB Ex. 22. NSB

[15] EPA is using the term "unrestricted PTE" to mean the source's PTE without consideration of the effect of the ORL/PTE limits.

Petition, at 43. NSB further contends that Region 10 cannot rely on the ORL/PTE limits to restrict Shell's emissions because Shell has the capability of exceeding the limits. NSB Petition, at 46-47. This latter argument, if carried to its logical conclusion, would make all PTE limits in permits invalid because a PTE limit would not be necessary in the first place if the source was not already capable of emitting at levels above the PTE limit (i.e., the source would not need a PTE limit to be a minor source). This argument collapses under its own weight.

As an initial matter, neither NSB nor any other commenter contended during the public comment period that the NOx ORL/PTE limits are not enforceable as a practical matter.[16] As discussed in Section III above, issues and arguments raised by a petitioner that are not raised during the public comment period will not be considered preserved for review without a demonstration that they were not reasonably ascertainable at the time. *See, e.g., BP Cherry Point*, 12 E.A.D. --, slip op. at 14-15; *In re AES Puerto Rico*, 8 E.A.D. 324, 335 (EAB 1999). NSB does not and cannot contend that the issue of practical enforceability was not reasonably ascertainable during the public comment permit. Indeed, the NO_x ORL/PTE limits were contained in the draft permits and explained in the statement of bases. Kulluk Permit, NSB Ex. 10, at Condition 7, 8; Frontier Discoverer Permit, NSB Ex. 11, at Condition 7, 8; Kulluk Statement of Basis, NSB Ex. 3, at 22-23; Frontier Statement of Basis, NSB Ex. 4, at 21-22.

[16] ADEC commented that the permits should contain "verifiable methods and appropriate accuracy for measuring fuel consumption." ADEC Comments, EPA Ex. D-15 (comment on Alternate Measure 2) . In response to this comment, EPA included in the permits a requirement that Shell's fuel flow metering equipment achieve and maintain a minimum level of accuracy. Response to Comments, NSB Ex. 12, at 24; Kulluk Permit, NSB Ex. 10, at Condition 7.7.b; Frontier Discoverer Permit, NSB Ex. 4, at Condition 7.7.b.

In any event, NSB is incorrect in its assertion that the NO_x ORL/PTE limits are not practically enforceable.[17] The Clean Air Act does not specifically address how to calculate a facility's PTE. The OCS definition of "potential emissions" and the corresponding onshore area definition of "potential to emit" refer generally to physical and operational constraints, but leave room for interpretation about what forms of practically enforceable limitations may be appropriate in particular circumstances. *See* 40 C.F.R. § 55.2 and Appendix A (incorporating by reference 18 AAC 990(80) and Ak. Stat. 46.14.990(23), which in turn incorporate by reference 40 C.F.R. § 51.166(b)(4)). Although NSB refers to EPA's 1989 Guidance, which discusses strategies for limiting potential emissions from newly constructed facilities, NSB fails to note that EPA has issued several subsequent guidance documents addressing PTE limits.[18] These documents illustrate that the Clean Air Act and its implementing regulations allow for a flexible, case-by-case evaluation of appropriate methods for ensuring practical enforceability of PTE limits. *See Masada II* at 4-5. The key consideration throughout these policy and guidance

[17] Because of the technical nature of establishing limits on PTE, as discussed in Section III above, Region 10 is entitled to particular deference on this issue.

[18] *See, e.g.*, Memorandum entitled "Guidance an[d] Enforceability Requirements for Limiting Potential to Emit through SIP and §112 Rules and General Permits," from Kathie A. Stein, Director, Air Enforcement Division, Office of Enforcement and Compliance Assurance, to Regional Air Directors, dated January 25, 1995; Memorandum entitled "3M Tape Manufacturing Division Plant, St. Paul, Minnesota," from John B. Rasnic, Director, Stationary Source Compliance Division, EPA's Off ice of Air Quality, Planning and Standards, to David Kee, Director, EPA Region V Air and Radiation Division, dated July 14, 1992; Memorandum entitled "Policy Determination on Limiting Potential to Emit for Koch Refining Company Clean Fuels Project," from John Rasnic to David Kee, dated March 13, 1992; Memorandum entitled "Use of Long Term Rolling Averages to Limit Potential to Emit," from John Rasnic to David Kee, dated February 24, 1992. These memoranda are available on EPA's Title V Policy and Guidance Database, at http://www.epa.gov/region07/programs/artd/air/policy/search.htm.

documents is whether the terms and conditions that limit the potential emissions are, in fact, enforceable as a practical matter.

The NO_x ORL/PTE limits in the Shell permits are not, as NSB asserts, mere caps on emissions. The permits contain weekly "rolling cumulative total" emission limits for NO_x with emissions recorded each week and added to the total from the previous 51 weeks to determine an annual emissions total each week. Kulluk Permit, NSB Ex. 10, at Condition 7; Frontier Discoverer Permit, NSB Ex. 11, at Condition 7. In developing the NO_x ORL/PTE limits, EPA recognized that only certain groups of engines are projected to contribute significantly to facility-wide emissions. Response to Comments, NSB Ex. 12, at 25-26. These "major emitters" are expected to generate more than 90 percent of all NO_x emissions at the Shell sources. *Id.* Obviously, it is critical for these "major emitters" to employ accurate measuring and monitoring techniques so as to minimize the potential for uncertainty associated with determining facility-wide emissions. The permits impose two methods for determining emissions from the "major emitters," both of which require establishing source group-specific emission factors based upon stack testing. Kulluk Permit, NSB Ex. 10, at Conditions 7.7 and 7.8; Frontier Discoverer Permit, NSB Ex. 11, at Conditions 7.7 and 7.8. The permits require Shell to conduct stack tests and develop emission factors across multiple load conditions for each class of engine. The permits then require Shell to calculate emissions from the "major emitters" for comparison against the emission limit by monitoring one of two parameters.

Generator load is one such parameter. For each generator, there is a corresponding engine to supply the mechanical energy that the generator transforms into electricity. The permit requires Shell to measure the load on each generator resulting from downstream electrical demand, such as the load created by a motor driving a drill or a compressor (i.e., anything that

puts a demand on the generator). The cumulative load value is calculated and recorded every 15 minutes.[19] Kulluk Permit, NSB Ex. 10, at Condition 8.2.b(i); Frontier Discoverer Permit, NSB Ex. 11, at Condition 8.2.b(i). The calculated load (in kilowatts) is then multiplied by a corresponding load-specific emission factor (pound NO_x per kilowatt hour) that is determined by stack tests. Thus, Shell is able to track on an ongoing basis the calculated NO_x emissions.

In the alternative, the permits authorize Shell to use weekly fuel usage as the parameter for measuring and monitoring emissions. Because fuel usage alone is not as strong a surrogate for predicting NO_x emissions when an engine is operated over multiple load conditions, when Shell relies on weekly fuel usage to determine emissions, the permits require Shell to use the worst-case emission factor from the stack testing. Kulluk Permit, NSB Ex. 10, at Condition 8.2.b(i); Frontier Discoverer Permit, NSB Ex. 11, at Condition 8.2.b(i).

For the smaller emission units expected to comprise less than 90% of all emissions, the permits require Shell to track weekly fuel usage and to calculate emissions based on emissions factors derived from AP-42 and equipment vendors. Kulluk Permit, NSB Ex. 10, at Condition 7.7 and Table 3; Frontier Discoverer Permit, NSB Ex. 11, at Condition 7.7 and Table 3.

Having gathered this data, Shell must calculate its facility-wide NO_x emissions each and every week. Kulluk Permit, NSB Ex. 10, at Conditions 7.6-7.9; Frontier Discoverer Permit, NSB Ex. 11, at Conditions 7.6-7.9. Then, Shell must use this information to monitor whether it is approaching the weekly rolling NO_x ORL/PTE limits and, if so, make any necessary adjustment to its operations to ensure that it does not exceed the limits.

[19] Continuous emissions monitoring systems (CEMS) used to measure emissions generated by units subject to a New Source Performance Standard are similarly required to measure and record emissions every 15 minutes. *See* 40 C.F.R. § 60.13(e)(2).

Even the 1989 Guidance cited by NSB, which has been refined in numerous documents in the intervening 18 years, specifically contemplates PTE limits based solely on an emission limit in particular circumstances. For example, the 1989 Guidance recognizes that emissions limits, coupled with the requirement to install, maintain, and operate a continuous emissions monitoring system (CEMS) to determine compliance, may be appropriate where setting operating parameters for control equipment is infeasible. 1989 Guidance, at 8. In *Masada II*, for example, the EPA Administrator rejected claims similar to those made by NSB here, and declined to object to a state operating permit containing rolling cumulative emission limits for NO_x and SO_x because the monitoring, recordkeeping, and reporting in the permit was sufficient to ensure practical enforceability of the PTE limit. Masada II, at 4-6.

The emissions-based NO_x ORL/PTE limits imposed by Region 10 in the Shell permits provide Shell with the operational flexibility it needs to respond to the extreme and variable weather and exploratory drilling situations it will face in the Beaufort Sea, yet concurrently impose sufficient monitoring, recordkeeping, and reporting requirements to ensure compliance with the NO_x emission limits. The detailed monitoring, recordkeeping, and reporting requirements in the permits operate to ensure compliance on a continuous weekly basis.

With respect to NSB's contention that the NO_x ORL/PTE limits are not short-term, NSB Petition, at 44, EPA guidance acknowledges that permits may appropriately include longer term limits if they are rolled (meaning recalculated periodically with updated data) on a frequent basis (e.g., daily or monthly). The 1989 Guidance recognizes that such longer rolling limits may be appropriate for sources with "substantial and unpredictable annual variation in production." 1989 Guidance, at 9. Similarly, the Agency explained in a 1995 guidance document that "EPA policy allows for rolling limits not to exceed 12 months or 365 days where the permitting

authority finds that the limit provides an assurance that compliance can be readily determined and verified."[20] *See also Masada II*, at 6.

Annual limits rolled on a weekly basis are entirely appropriate where, as here, the operations of the facility will fluctuate throughout the year and adequate monitoring, recordkeeping, and reporting ensure practical enforceability. *Masada* II, at 8. The Shell permits require that NO_x emissions be recorded, recalculated, and updated on a weekly basis. Kulluk Permit, NSB Ex. 10, at Condition 7, 8; Frontier Discoverer Permit, NSB Ex. 11, at Condition 7, 8. In addition, as a practical matter, the drill ships will be operating less than five months each year given Shell's intention to drill only during open water season. Kulluk Permit Application, NSB Ex. 1, at 1; Frontier Discoverer Permit Application, NSB Ex. 2, at 1. Moreover, Shell is aware that operations must be suspended when necessary to avoid exceeding the limits. Email from Shell dated June 5, 2007, EPA Ex. E-15.[21] In the unlikely event the NO_x ORL/PTE limits are exceeded, not only may Shell need to apply for and obtain a PSD permit, but it may be considered to have been in violation of PSD and/or NSR from the time it was initially constructed. Memorandum entitled "Guidance on the Appropriate Injunctive Relief for Violations of Major New Source Review Requirements," from Eric V. Shaeffer, Director, Office of Regulatory Enforcement, Office of Enforcement and Compliance Assurance, to Regional Air Directors, dated November 17, 1998, at 5-6; *Masada II*, at 9.

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[20] Memorandum entitled "Guidance and Enforceability Requirements for Limiting Potential to Emit through SIP and §112 Rules and General Permits," from Kathie A. Stein, Director, Air Enforcement Division, Office of Enforcement and Compliance Assurance, to Regional Air Directors, dated January 25, 1995.

[21] Shell states that, "Shell Offshore Inc. will be able to comply with the requested Owner Requested Limits (ORLs) submitted with the application materials for limiting NO_x emissions from the Kulluk and Frontier Discoverer stationary sources."

Essentially, the crux of NSB's argument on practical enforceability appears to be that the NO_x ORL/PTE limits are not enforceable as a practical matter because Shell has the ability to violate the emission limits. NSB Petition, at 45-47. This is true with virtually any emission limit established in a permit. Thus, NSB's argument, if carried to its logical conclusion, would make all PTE limits invalid because a PTE limit would not be necessary in the first place if the source was not already capable of emitting at levels above the PTE limit. In other words, there would be little point in establishing a limit in a permit—a legal requirement that the permittee comply with the limit—if the source did not have the capacity to emit above the limit in the first place (i.e., there would be no point to issuing a PTE limit if the source were a so-called "true minor source").[22] NSB suggests that a requirement to use controls or limit fuel usage would be practically enforceable, NSB Petition, at 45, but then fails to explain how a requirement to use controls or limit fuel usage is any less likely to be violated than a limit on emissions where there is adequate monitoring, recordkeeping, and reporting. Following NSB's logic, Shell is just as likely to disregard a limit on fuel usage as it is to disregard a limit on emissions. The important point, however, is that Shell is bound by the NOx ORL/PTE limits and that the permits contain sufficient monitoring recordkeeping, and reporting to verify whether Shell is in fact in compliance with the limits.[23] In sum, the NO_x ORL/PTE limits established in the Shell OCS

[22] Indeed, the whole point of ADEC's regulation for "owner-requested limits," 18 AAC 50.225, which is applicable to Shell by virtue of 40 C.F.R. Part 55, Appendix A, is to provide a means for a source to request that the permitting authority impose a limit to which the source is not otherwise subject in order to avoid certain regulatory requirements, such as PSD. *See* 18 AAC 50.508(5). As discussed above, this is common under the Clean Air Act. *In re Peabody Western Coal Co.*, 12 E.A.D. --, slip op. at 13 (EAB, Feb. 18, 2005)

[23] NSB cites to the discussion in *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1122, 1133 (D. Colo. 1987) regarding actual versus potential emissions. NSB Petition, at 44. NSB overlooks a critical distinction between the facts of the *Louisiana-Pacific* case and Shell. Louisiana-Pacific obtained limits on its potential to emit and then routinely exceeded those

permits are consistent with the Clean Air Act, EPA's implementing regulations, and Agency policy and guidance regarding enforceable limits on PTE.

5. The Permits Require Sufficient Testing, Monitoring, and Reporting to Ensure Each Source Remains Below Major Source Thresholds. [24]

Contrary to NSB's claim, NSB Petition, at 47-53, the permits do include sufficient testing, monitoring, and reporting requirements to ensure that NO_x emissions do not exceed 245 tons per year. The requirements are extensive and provide adequate assurance that the NO_x ORL/PTE limits of 245 tons per year per drill site will not be exceeded. As explained in the Response to Comments, NSB Ex. 12, at 43, and in more detail below, the NO_x ORL/PTE limits are accompanied by extensive testing, monitoring, recordkeeping, and reporting so as to verify compliance with the limits.[25]

NSB contends that it is inappropriate for Region 10 to rely on AP-42 emission factors to establish permit limits and determine compliance given the relative uncertainty of AP-42 emission factors. As discussed above, in the absence of source-specific emission factors, Region 10 relied on Shell's emission estimates based on AP-42 emission factors and vendor data *to conclude that Shell can be expected to comply with the ORL/PTE limits given Shell's projected operations*. Response to Comments, NSB Ex. 12, at 24. For determining compliance with the

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limits, so that its actual emissions did in fact exceed major source thresholds. *See United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 1156 (D. Colo. 1988). As discussed above, should Shell routinely violate its ORL/PTE limits, it would be subject to PSD.

[24] Although Region 10 received general comments during the public comment period that the permit lacked monitoring or was based on insufficient emission factors, the specific issues raised by NSB in its petition in this section (NSB Petition, at 47-53) were not raised during the public comment period and therefore are not properly the subject of review.

[25] Because of the technical nature of establishing testing, monitoring, recordkeeping, and reporting requirements, as discussed in Section III above, Region 10 is entitled to particular deference on this issue.

NO_X ORL/PTE limits, the permit relies on source-specific emission factors derived from stack tests for the emission units expected to comprise more than 90% of all emissions.[26] NSB glosses over the fact in order to suggest a level of uncertainty that does not exist.

It is true that for emission units expected to make up less 10% of all emissions, the permit relies on AP-42 emission factors and vendor data, rather than source-specific emission factors, for monitoring emissions and determining compliance with the NO_x ORL/PTE limits. Region 10 concluded the AP-42 emission factors and vendor data were sufficiently reliable for this purpose given the small contribution of these emission units to overall emissions and the quality of the emission factors. Kulluk Statement of Basis, NSB Ex. 3, at 13, 22-23; Frontier Discoverer Statement of Basis, NSB Ex. 4, at 13, 22-22.[27]

As discussed above in Section IV.B.4, the monitoring, recordkeeping, and reporting requirements in Conditions 7 and 8 of the permits require Shell to take numerous and specific actions to track its NO_x emissions on a regular and frequent basis. Kulluk Permit, NSB Ex. 10, at Condition 7, 8; Frontier Discoverer Permit, NSB Ex. 11, at Condition 7, 8. These terms

[26] For the first few weeks after a source begins operation, before stack testing is required, compliance with the NO_x ORL/PTE limit will be based on AP-42 emission factors and vendor data, but because this emission limit is a weekly rolling annual limit, there is virtually no possibility that Shell could exceed the limit within the first few weeks of operation.

[27] Even for these "small emitters," NSB suggests far greater uncertainty in the emission factors than actually exists in this case. For example, NSB for the first time in its petition questions Region 10's decision to use an emission factor of 0.654 lb NO_X per gallon of diesel fuel consumed for seventeen emissions units within Source Groups A3 and D authorized under the Kulluk permit. NSB Petition, at 51-52; *see also* Kulluk Permit, NSB Ex. 10, Table 3. The emission factor was derived from the AP-42 emissions factor of 0.031 lb NOx per horsepower hour power output for diesel-fired combustion engines smaller than 600 horsepower. AP-42, Table3.3-1. NSB mischaracterizes in its petition the meaning of the emission factor's rating as assigned by EPA within AP-42. Contrary to NSB's assertion, the "below average" rating for this emission factor does not in any way indicate that the emission factor is off by an order of magnitude.

require Shell to track its emissions closely; thus, Shell will know whether it is approaching noncompliance with the NO_x limit. Condition 7.8.b in fact requires Shell to record the load levels every 15 minutes from the engines constituting approximately 90% or more of all emissions. The permits require Shell to calculate and record cumulative NO_x emissions at least once per week.[28] Kulluk Permit, NSB Ex. 10, at Condition 7.6-7.9; Frontier Discoverer Permit, NSB Ex. 11, at Condition 7.6-7.9. Condition 16 requires Shell to keep all records required by the permit for at least five years from the date of collection. Condition 17 requires Shell to certify all records or reports submitted to EPA. Lastly, we note that NSB does not recommend any specific monitoring, recordkeeping, and reporting that should be included in the permits in lieu of or in addition to that which is already contained in the permits. In sum, the monitoring, recordkeeping, and reporting requirements are significant and are designed to readily determine and verify compliance with the emission limit.

Limits on potential to emit are established in permits on a case-by-case basis. The ORL/PTE limits on NO_x emissions are effective and enforceable limits on PTE and are appropriate under the specific circumstances of Shell's unique, exploratory operations. NSB has failed to demonstrate that Region 10's decision that the NO_x ORL/PTE limits are effective to limit Shell's PTE below major source thresholds is based on either a clearly erroneous finding of fact or conclusion of law, nor does it involve an important matter of policy or exercise of

[28] As Shell states in its February 7, 2007 letter to EPA, "This (NO_X tracking) equation allows for the tracking of the total NO_X emission as time progresses and allows Shell to predict if (in the unlikely event) that a drilling program would need to be terminated before completion." Shell Letter dated February 7, 2007, EPA Ex. E-17.

discretion that warrants review. Therefore, NSB's request for review of this issue should be denied.

C. Modeling

1. Region 10's Modeling Was Adequate and Demonstrates the NAAQS Will be Protected.

NSB alleges that the modeling was flawed and does not demonstrate that the NAAQS will be protected. NSB Petition, at 53. A minor source permit application, such as the one submitted by Shell, must include an air quality impact analysis for nitrogen dioxide (NO_2),[29] particulate matter less than 10 microns in diameter (PM_{10}), and sulfur dioxide (SO_2) to demonstrate whether the potential emission impacts from the new source will comply with the NAAQS for each of these pollutants. 18 AAC 50.540(c)(2)(B). Modeling is conducted to predict the ambient air impacts from stationary sources in a particular airshed by comparing the background air quality, i.e., the air quality as it exists without the new stationary source, to the air quality as it would exist with the new source operating as permitted. In general, new stationary source concentration impacts are estimated by applying an appropriate EPA air quality dispersion model. Specific features in each model are designed to analyze different source types (e.g., area sources, point sources, mobile sources) and different terrain types (e.g., complex, simple, flat) under a variety of meteorological conditions. Each model may be run based on the certain meteorological inputs specific to the ambient air locations where the permitting activity will occur. For these permits, Shell relied on the model referred to as ISC-PRIME.[30] Region

[29] For modeling purposes, all nitrogen oxides ($NO_{x)}$ are initially assumed to be nitrogen dioxide (NO_2).

[30] ISC-PRIME is a computer model rather than an actual document, so it is not included in the Excerpts to the Record filed with this Response; it is, however, included in Administrative Record CD #2, filed earlier.

10's Reply to Shell's Request to Use ISC-PRIME, EPA Ex. B-25 (02/09/07 email). As explained below, NSB's allegation that the modeling used here was flawed and fails to demonstrate that the NAAQS will be protected is without basis.

Contrary to NSB's claim, the modeling data verifies that the NAAQS will continue to be protected. The ambient air on the North Slope of Alaska currently is achieving the NAAQS. *See* 40 C.F.R. § 81.302 (indicating the Air Quality Control Region 09 Northern Alaska Interstate is unclassifiable/attainment). Shell has demonstrated that its emissions will not cause or contribute to the NAAQS for NO_2, PM_{10}, or SO_2 being exceeded at the edge of the drill ship and outward when operated as Shell intends to operate. Response to Comments, NSB Ex. 12, at 62; Statement of Basis, NSB Ex. 3, at 20; Modeling Results, EPA Ex. B-9, B-10, B-11, B-12, B-13.[31] Specifically, the modeling demonstration and results for both the Kulluk and the Frontier Discoverer, as described in the statement of basis and subsequently updated, show that the maximum projected air quality impacts from the drill ships combined with background air quality [32] are less than the NAAQS. Statement of Basis, NSB Ex. 3, at 13; Modeling Results, EPA Ex. B-9, B-10, B-11, B-12, B-13; Response to Comments, NSB Ex. 12, at 93. The modeling was conducted with receptor points located at the edge of the drill ship and out to a distance where the maximum concentration impact was predicted by the model.

The model predicted that the NAAQS would not be exceeded at any receptor location. Modeling Results, EPA Ex. B-4, B-5, B-10. Given the distance from the drill ships and the point

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[31] The outputs from running the model are voluminous, so they are not included in EPA's Excerpts to the Record, filed with this Response. They are, however, on Administrative Record CD #2 (*see* 09May07 folder).

[32] Ambient air quality measurements are assumed to be representative of the existing air quality in the project area. Statement of Basis, NSB Ex. 3, at 18.

of maximum impact, it is reasonable to conclude that the drill ships' impacts on air quality in or near the Village of Nuiqsut will be less than the drill ships' maximum impacts. Response to Comments, NSB Ex. 12, at 31. Furthermore, recognizing that air quality is fairly uniform across the Beaufort Sea, even using worst-case meteorology to determine the ambient impacts, Shell's exploration activities will not cause or contribute to a NAAQS violation in any lease block in the Beaufort Sea. Response to Comments, NSB Ex. 12, at 54. Thus, contrary to NSB's claim, the model demonstrates the NAAQS will continue to be protected.[33]

2. The Modeling is Valid for Arctic Conditions.

NSB claims the models Shell used are not valid for Arctic conditions and that no explanation was provided for not requiring that Shell use a preferred model. NSB Petition, at 55. Contrary to NSB's assertion, Shell used EPA-accepted screening techniques and models, and followed EPA guidance to quantify the project's emissions under Arctic conditions.

The statement of basis indicates that Region 10 approved the use of the ISC-PRIME model for these permits. Statement of Basis, NSB Ex. 3, at 14; Model Determination, EPA Ex. B-25, at 4 (*see* 02/09/07 email). The model was evaluated for use in Arctic conditions. Model Evaluation, EPA Ex. B-16, at 20-32. In particular, the meteorological conditions employed were designed to cover the complete range of possible dispersion conditions existing in the atmosphere, including extreme low wind speed and inversion conditions, and are appropriate for Arctic conditions. Statement of Basis, NSB Ex. 3, at 15.

[33] Furthermore, in response to a comment from the Alaska Department of Environmental Quality ("ADEC"), the final permits include a condition that the owner or operator will not cause or contribute to a violation of an ambient air quality standard or the standards of 18 AAC 50.110 (Air Pollution Prohibited). ADEC Comments, NSB Ex. 25; Final Permits, NSB Ex. 10, 11, at condition 14.

As Region 10 explained in the Response to Comments, Shell followed Section 2.3 of the Guideline on Air Quality Models in predicting the air pollutant impacts resulting from the operation of the drill ships. Response to Comments, NSB Ex. 12, at 32. Initially, Shell used the SCREEN3 model to predict ambient pollutant concentrations.[34] Permit Application, NSB Ex. 1. It subsequently used the ISC-PRIME model, with the SCREEN3 meteorology, in order to quantify ambient concentrations in the wake cavity. Statement of Basis, NSB Ex. 3, at 15; Modeling Results, EPA Ex. B-4, B-5. The predictions using the latter model did not reveal any exceedance of an air quality standard that could contribute to a NAAQS violation. Response to Comments, NSB Ex. 12, at 34.

3. The Modeling Includes All Emission Units and Ranges of Operating Conditions.

NSB asserts that the modeling did not include all emission units or ranges of operating conditions. NSB Petition, at 56-57. Contrary to NSB's claim, the modeling was done under worst-case scenarios. Modeling Results, EPA Ex. B-4, B-5. The meteorological conditions employed in the screening modeling methodologies are designed to cover the complete range of possible dispersion conditions existing in the atmosphere, even extreme low wind speed, inversion conditions. Response to Comments, NSB Ex. 12, at 32; Modeling Results, EPA Ex. B-

[34] To explain further, in this case, a screening technique was initially used to predict ambient concentration impacts. The meteorology used in the technique consists of worst-case hourly conditions which Region 10 believes will result in conservative concentration predictions. Section 2.3 of the Guideline on Air Quality Models, contained in Appendix W of, identifies two levels of models, a screening technique and a refined technique. *See* 40 CFR Part 51, Appendix W. The screening technique uses assumptions that would result in a conservative estimate of air pollutant impacts, meaning it would indicate greater impacts. If this technique does not show a possible exceedance of an air quality standard, further analysis is not required. On the other hand, if a possible exceedance is predicted using a screening technique, a more refined technique including onsite meteorological data is applied to better estimate the predicted concentration impact. Here, because the screening technique did not predict any violations, a refined technique using site-specific meteorology was not necessary.

4, B-5. Here the model was run using 54 different meteorological conditions for each five-degree incremented wind direction (i.e., 0 to 360 degrees). The meteorological conditions consisted of a combination of factors such as varying wind speed, day-time and night-time conditions, and mixing heights. The modeling considered a full range of receptor locations to capture maximum predicted concentration impacts and evaluated the combined contribution of all the sources. Statement of Basis, NSB Ex. 3, at 15-20; Model Analysis, EPA Ex. B-4, B-5, B-9, B-10, B-11, B-12, B-13.

NSB claims that Shell failed to include all emission units or sources in its data inputs and also failed to include a range of inputs for all operating conditions. NSB Petition, at 55. This claim is without merit. A review of the record indicates that all of the emission units were considered in the air quality modeling analysis. Statement of Basis, NSB Ex. 3. The modeling results for both the Kulluk and the Frontier Discoverer were based on a worst-case operating scenario and included all the emission units identified by Shell. Modeling Results, EPA Ex. B-4, B-5. Subsequently, Shell identified additional (new or replacement) emission units. Upon additional evaluation, Shell determined that the emissions associated with these additional units were relatively small and did not change the conclusions regarding the drill ships' ambient air impact; they would not cause or contribute to an ambient air quality standard violation. Modeling Results, EPA Ex. B-9, B-10, B-11, B-12, B-13. NSB has provided no evidence that significant emission units were not included in the modeling analysis that Shell conducted. Therefore this claim is without basis.

4. The Background Data Are Adequate and Region 10 Addressed Significant Comments about Background Concentrations.

NSB claims that the background data relied on in the air quality modeling analysis were inadequate. NSB Petition, at 55. NSB also suggests that Region 10 failed to address significant

comments about the background concentrations. *Id.* Region 10 reviews the air quality modeling protocol for each permit application on a case-by-case basis. Prior to conducting the modeling, Shell discussed with Region 10 the models and assumptions, including the background air quality data the company planned to use to predict ambient air quality impacts. Shell followed the applicable regulations and guidance; accordingly, Region 10 had no objection to the proposed modeling. Shell conducted the modeling under a range of worst-case conditions. ADEC determined, and Region 10 agreed, that the air quality data collected at Badami met EPA's quality assurance requirements, *see* Ambient Monitoring Guidance, EPA Ex. B-24, at 6,[35] was representative of the background air levels in the outer continental shelf, and was current. Collecting site-specific or updated air quality data to run the models therefore was unnecessary. Response to Comments, NSB Ex. 12, at 35.

Contrary to NSB's contention, Region 10 did in fact address comments about background air quality data. In response to comments that the background air quality data from Badami was not representative of the project area. Region 10 explained that it had reviewed the background data and other air quality data, from Kuparuk, with ADEC. The data indicated that the PM_{10} maximum 24-hour and annual average measured concentrations represented an "upper bound estimate" and could be higher than actual levels by a factor of two. However, ADEC and Region 10 concluded that the Kuparuk data did not meet EPA quality assurance requirements, and therefore could not be used to represent background air quality levels. Discussion of

[35] This voluminous document was not included in EPA's Excerpts to the Record, filed with this Response. It is, however, on Administrative Record CD #2.

Kuparuk Data, EPA Ex. B-25, at 13 (*see* 05/22/07 email).[36] Moreover, because of the prevailing wind conditions and existing local industrial sources in the Kuparuk area, the Kuparuk air quality data were not considered representative, and were expected to be higher than levels where the Kulluk and the Frontier Discoverer would be operating. Use of the Kuparuk data for SO_2 and NO_2 is an over-estimate of background air quality levels; however, it still does not result in a total air quality impact that would exceed the NAAQS. In conclusion, the background data, methods, and assumptions relied on in this instance to conduct the air quality analysis were appropriate for the location at issue and for the sources being evaluated.

In conclusion, NSB has failed to demonstrate that Region 10's decisions regarding the modeling are clearly erroneous, nor do they involve an important matter of policy or exercise of discretion that warrants review. Due to the technical complexity associated with the selection, evaluation, execution, and analysis of air quality models and the data they generate, Region 10 is entitled to deference on these modeling-related issues. Therefore, NSB's request for review of the modeling issues should be denied.

D. Public Participation

1. <u>The Public Comment Period and the Hearing Schedule Were Adequate to Allow Meaningful Public Participation</u>.

NSB argues that the EAB should review Region 10's discretion in scheduling the public hearing on the proposed permits and denying its request to extend the public comment period, arguing that Native communities were denied the opportunity for meaningful participation because the public hearing and comment period took place during the subsistence hunting

[36] The ADEC memo referred to in the May 22, 2007 email was inadvertently omitted from the copies of the Administrative Record previously filed with the EAB. A copy of that memo is included in EPA's Excerpts to the Record, filed with this Response. EPA Ex. B-25.

season. NSB Petition, at 59-64. As explained below, the EAB should deny review of this issue because Region 10 satisfied all applicable notice and comment requirements

As NSB acknowledges, NSB Petition, at 59, EPA's regulations for issuance of OCS permits in 40 C.F.R. Part 124 require public notice of the draft permit and a comment period of at least 30 days. Part 124 also provides that the Region may, at its discretion, hold a public hearing if there is sufficient public interest or if a hearing would help clarify issues; the Region must give at least 30 days' notice of any hearing. 40 C.F.R. §§ 124.10(b)(1) and 124.12(a). There is no dispute that Region 10 provided at least 30 days for public comment as the public comment period began on April 5, 2007 and ended on May 12, 2007, a total of 37 days (a week longer than the minimum), and at least 30 days' notice of the public hearing it held in Nuiqsut.

To enhance the public's opportunity to comment, on April 5, 2007, information about the proposed permits and the opportunities for providing input was widely disseminated. Specifically, Region 10 distributed hard copies of Shell's two permit applications, the two proposed air permits, and Region 10's technical support document/statement of basis for the proposed permits to both the city offices and post offices of Nuiqsut, Barrow, and Kaktovik, as well as making them available in EPA's offices in Anchorage, Alaska and Seattle, Washington. Notices to Alaska Native Villages, EPA Ex. C-6, C-7; Response to Comments, NSB Ex. 12, at 78-80. All these materials were posted on Region 10's air quality webpage at the same time. Also on April 5, Region 10 sent a Notice of Public Comment and Public Hearing to the 30 federally-recognized tribes on the North Slope (from the list maintained by the U.S. Department of the Interior) and the list of contacts that the State of Alaska uses to inform interested parties about air quality permits. Response to Comments, NSB Ex. 12, at 79. The Notice informed interested parties that a public hearing would be held in Nuiqsut on May 8, 2007 and that public

comments could be submitted until May 12, 2007. *Id.* EPA offered to hold hearings in both Barrow and Kaktovik; Barrow did not respond to EPA's request to set up a public hearing and Kaktovik declined the offer due to a scheduling conflict. *Id.* Thus, the proposed permits and primary supporting materials were readily available to the public. Written comments that Region 10 received on the proposed permits were also posted on the website and therefore available for public review as well. *Id.* On May 8, 2007, Region 10 representatives held an informational session for questions and answers in Nuiqsut, Alaska; the session was open to the public. Following the informational session, Region 10 held a public hearing, which was recorded and transcribed, during which individual community members provided oral or written public comments. Both the information session and the public hearing were advertised ahead of time in the Anchorage Daily News. Anchorage Daily News Affidavit of Publication, EPA Ex. C-10; Artic Sounder News Story, EPA Ex. C-11.

On April 18, 2007, NSB requested that Region 10 defer the public hearing that was scheduled for May 8, 2007 in Nuiqsut, Alaska to June 4, 2007 and extend the public comment period until after any rescheduled hearings were held; in the request, NSB explained that participation in traditional subsistence harvest and cultural activities that normally occurs in May would preclude many interested parties from preparing comments and/or attending the public hearing. NSB Request to Extend Comment Period, NSB Ex. 8. There are no standards in Part 124 that specify when it is appropriate to extend a public comment period, so this is committed to EPA's discretion. In the letter denying the requests to defer the public hearing and extend the public comment period, Region 10 explained that it was balancing a number of competing interests, including the importance of providing the North Slope communities the opportunity to express their concerns, the amount of information-sharing that had already occurred, and the

seasonal conditions on the North Slope. EPA Response to NSB Request to Extend Comment Period, NSB Ex. 27. The letter also noted that expediting energy-related projects is a national priority. *Id.*; *see, also*, Executive Order 13212, 66 Fed. Reg. 28357 (May 22, 2001) as amended by Executive Order 13302, 68 Fed. Reg. 27249 (May 20, 2003). Thus, EPA's decision not to extend the public comment period or hearing date was based on a reasonable balancing of competing factors.

In conclusion, once the Region has met the public notice requirements of Part 124, the decision whether to extend the public comment period or reschedule a public hearing is within the Region's discretion. Furthermore, NSB and other members of the public had adequate opportunity to review the proposal and the record, and to comment on the proposed permit terms. Therefore, the EAB should deny review on this issue.

2. Region 10 Engaged in Appropriate Government-to-Government Consultation with Alaska Native Communities on the North Slope.

NSB also asserts Region 10 failed to comply with Executive Order 13175 ("EO 13175"), which relates to consultation and coordination with Indian tribal governments, and more generally failed to give effect to the government-to-government relationship between EPA and Alaska Native communities. Contrary to NSB's claim, Region 10 fully satisfied any government-to-government consultation responsibilities.

EO 13175 applies to "policies that have tribal implications," which refers to certain federal agency actions that have substantial direct effects on one or more Indian tribes, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes. 65 Fed. Reg. 67249 (Nov. 9, 2000). In certain circumstances, EO 13175 calls for government-to-government consultation prior to agency action. NSB does not specifically explain why it believes EO 13175 applies in

this case or how the consultation provisions of this executive order are triggered. In any event, any issue regarding applicability or fulfillment of the EO is moot because Region 10 did, in fact, consult with Alaska Native Villages on the North Slope in connection with these permits.

Region 10 notes that, apart from EO 13175, there are specific EPA policies addressing issues relating to EPA's government-to-government relationship with Indian tribes. For instance, the 1984 EPA Policy for the Administration of Environmental Programs on Indian Reservations, also known as the EPA Indian Policy, recognizes the federal trust responsibility to federally recognized Indian tribes and seeks to assure that tribal concerns and interests are considered whenever EPA actions may affect tribes.[37] In addition, Region 10 has established a Tribal Consultation Framework, dated July 16, 2001, which guides Region 10 offices when it consults with federally recognized tribal governments.[38]

Recognizing that the North Slope Alaskan Native Village communities are important partners in Region 10's efforts to protect air quality on the North Slope of Alaska, Region 10 gave full effect to these government-to-government consultation policies in developing these permits. First, while in the early stages of developing the permits, Region 10 specifically sought input from the 30 federally-recognized Alaska Native tribes on the North Slope and invited them to initiate government–to-government consultation. Letter and Fact Sheet dated February 21, 2007, EPA Ex. L-3, at Attachment D.[39] Then, as described in more detail above, Region 10

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37 This policy is available at http://www.epa.gov/tribalportal/pdf/indian-policy-84.pdf.

[38] This policy is available at http://yosemite.epa.gov/r10/tribal.NSF/4b1d54516ad8884f8825682400645235/4e239b01fbabd5198825694b00041cc5?OpenDocument.

[39] As explained in the Response to Comments, NSB Ex. 12, at 79, the Native Village of Nuiqsut responded and EPA scheduled a conference call and follow-up meeting in Nuiqsut. However, due to conflicting schedules, representatives from the Native Village of Nuiqsut were unable to

provided the permit applications, draft permits, and technical support document/statement of basis to three Alaska Native Villages, disseminated the Notice of Public Comment and Public Hearing to the 30 Alaska Native tribes on the North Slope, and held both an informational meeting and public hearing in Nuiqsut. In sum, EPA provided a reasonable amount of time and opportunity to the public, including Native communities, for consultation with Region 10 regarding the proposed permits and to participate in the permitting decision. Region 10 consulted with the Alaska Native communities on the North Slope consistent with the federal trust relationship and EPA tribal consultation policies while fulfilling its duties under the Clean Air Act. Region 10's actions regarding notice and comment and government-to-government consultation are not based on any clearly erroneous finding of fact or conclusion of law, nor do they involve an important matter of policy or exercise of discretion that warrants review. Therefore, NSB's request for review of this issue should be denied.

E. Environmental Justice

1. Region 10 Fulfilled its Environmental Justice Responsibilities.

NSB contends that Region 10 did not perform an adequate environmental justice analysis under Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" ("EO 12898"), 59 Fed. Reg. 7629 (Feb., 1994). NSB Petition, at 65. Specifically, NSB argues that Region 10's finding that the permits will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations is unsupported because Region 10 failed to conduct a comparative analysis of the effects on the minority population in the NSB in relation to the

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participate in the call. However, as described above, a public information session and public hearing were held in Nuiqsut on May 8, 2007.

general population or an appropriate reference group. NSB Petition, at 68. NSB asserts that Region 10 had an affirmative duty to identify and consider the racial and socioeconomic status of the community most likely to be affected by its permitting action. NSB Petition, at 65. As part of its environmental justice claim, NSB also alleges that Region 10 failed to provide adequate opportunity for public comment, and provided inadequate responses to public comments. NSB Petition, at 70-72. The EAB should deny review of this issue because Region 10 fulfilled all requirements pertaining to environmental justice.

In February 1994, the President issued EO 12898 to address environmental justice concerns associated with federal agency actions. 59 Fed. Reg. 7629 (Feb., 1994). EO 12898 directs federal agencies, including EPA, to the extent practicable and permitted by law, to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of regulatory programs, policies, and activities on minority populations and low-income populations. *Id.* at § 1-101. Consistent with EO 12898 and EPA's environmental justice policy, in making decisions regarding permits, such as these OCS permits, EPA gives appropriate consideration to environmental justice issues on a case-by-case basis, focusing on whether its action would have disproportionately high and adverse human health or environmental effects on minority or low-income populations.

Contrary to NSB's assertion, in implementing its environmental justice responsibilities, Region 10 was not required to identify the racial and socioeconomic status of the affected community or to conduct a specific comparative analysis in this case. Federal agencies have considerable discretion in how they perform an environmental justice analysis in any given case. Neither the EO nor EPA's Strategy implementing it require that any specific means must "be used to identify the potential for disproportionate impacts on minority populations." *In re Ash*

Grove Cement, 7 E.A.D. 387, 413 (EAB 1997). The failure to perform a particular type of calculation or analysis is not inconsistent with EO 12898 or the Agency's environmental justice policy. *Id.* Thus, NSB's claim that EPA failed to perform a specific type of comparative analysis in this case provides no basis for the EAB to grant review. Nor has NSB shown that the substance of the Region's environmental justice analysis was inadequate.

The record shows that Region 10 carefully considered and documented the environmental effects of its permitting decision by analyzing the potential air emissions associated with the exploratory drilling activity to be conducted under the permits. Response to Comments, NSB Ex. 12, at 78. Region 10's analysis indicates that operation of these facilities under the terms and conditions in the final permits will not cause or contribute to a NAAQS violation; NAAQS standards are established at a level such that their attainment and maintenance will "protect the public health" "allowing an adequate margin of safety." *See* Section 109(b) of the Clean Air Act, 42 U.S.C. § 7409(b). EPA's analysis considered the maximum projected air quality impacts of the proposed project combined with background air quality, Response to Comments, NSB Ex. 12, at 93 (*see* tables of Kulluk and Frontier Discoverer's Impacts vs. Primary NAAQS), and determined that operation of these facilities will not be expected to cause or contribute to a violation of the health-related air quality standards.[40] The fact that these facilities will not cause or contribute to a NAAQS violation means that they will not have a significant adverse impact, much less a disproportionately high and adverse effect, upon public health. Response to Comments, NSB Ex. 12, at 89.

[40] Criteria pollutants are those pollutants for which EPA has established NAAQS. Primary NAAQS set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.

Additionally, while Region 10 recognizes NSB's concerns about the potential impact of exploratory drilling on the bowhead whale migration patterns and other potential impacts to the Inupiat subsistence hunting and fishing and the traditional lifestyle, those potential impacts are not related to air emissions.[41] Accordingly, the Clean Air Act does not authorize the Region to consider such non-air-quality impacts on the Inupiat subsistence hunting or lifestyle. EO 12898 does not change the substantive statutory criteria for issuing a permit. *In re Chemical Waste Management of Indiana, Inc.*, 6 E.A.D. 66, 72 (EAB 1995). Moreover, EPA lacks the authority to base a PSD permit on consideration of "objectives unrelated to air quality." *In re Prairie State Generating Co.*, 13 E.A.D. --, slip op. at 39 (EAB, Aug. 24, 2006). Thus, evaluation of impacts to subsistence hunting and fishing "unrelated to air quality" are beyond the scope of these permits and not subject to EAB review in this action. NSB claims that EPA's public comment process and response to public concerns did not support a finding that Region 10 fulfilled its environmental justice responsibilities; specifically, NSB alleges that EPA did not respond adequately to comments NSB raised about environmental justice concerns. NSB Petition, at 70. NSB specifically asserts that EPA did not adequately address its claims that there was inadequate data to show that air quality will not violate the NAAQS, and that it failed to address the conditions it was imposing on the permit to protect public health. Those contentions are mistaken. Region 10 fully responded to the environmental justice concerns related to air quality issues raised during the public comment period. The Response to Comments, NSB Ex. 12, at 78,

[41] EPA does recognize the importance of these concerns and notes that they may be more appropriately raised in the context of other agency actions. *See, e.g.*, Minerals Management Services' Exploration Plan Approval, EPA Ex. K-10 (which considered the effect and impacts of exploration on subsistence hunting and lifestyle). *See, also*, Finding of No Significant Impact developed by the Minerals Management Service for the Shell Offshore Exploration Plan, NSB Ex. 32.

explicitly cited Response to Comment D-2 and explained that it demonstrates that "the final permits are designed to meet the requirements of the CAA and to protect the people and natural resources of the Alaska Native Villages." That information supports both EPA's permitting decision and its determination that this permitting action will not have disproportionately high or adverse human health or environmental effects on minority or low-income populations. Region 10 went on to explain the rationale for that determination, i.e., that the permits ensure compliance with the NAAQS, which, by statute, are established to protect public health with an adequate margin of safety. Also contrary to NSB's claim, the Response to Comments discussed the terms and conditions in the final permits and indicated that they are expected to curb air pollution sufficiently so that air quality in the region continues to attain the NAAQS, which in turn protect human health and the environment. Response to Comments, NSB Ex. 12, at 78. The permits contain the requirements necessary or appropriate to protect human and environmental health, in accordance with EPA's authorities under the Clean Air Act. *See, e.g.*, Kulluk Permit, NSB Ex. 10, at Condition 14; Frontier Discoverer Permit, NSB Ex. 11, at Condition 14 (requiring compliance with the NAAQS). In sum, NSB's contentions that EPA did not adequately address its comments are mistaken.

NSB also contends that the processes EPA provided for involving low income and minority communities in the decision were inadequate. NSB does not contend that the processes fell short of any applicable regulatory requirement, but argues that EPA should have done more to obtain input from such communities. But other statements in the petition underscore how much input the communities had in the process. The petition identifies various concerns that community members raised about the lack of data and information about the nature and location of activities under the permit, air pollutant deposition data, and the effects of other activities

under the permit. The petition does not identify any additional concerns that could have been raised had there been different public participation opportunities. It does not assert that EPA lacked any information it needed to make an informed decision, or otherwise explain how additional public participation would have led to a different result.

Finally, review on this issue should be denied because Region 10's determinations are not clearly erroneous. Environmental justice analysis review is warranted only when the petition demonstrates that the agency analysis is either factually or legally "clearly erroneous." *In re Prairie State Generating Co.*, 13 E.A.D. --, slip op. (EAB, Aug. 24, 2006). NSB has failed to demonstrate Region 10's analysis is clearly erroneous. *See, also*, *In re AES Puerto Rico, L.P.*, 8 E.A.D. 324, 352 (EAB 1999) (denying review based in part on failure to show that "Region committed clear error on issues of environmental justice").

Region 10 has complied with the provisions of EO 12898, and its findings are not based on either a clearly erroneous finding of fact or conclusion of law, nor do they raise an important matter of policy or exercise of discretion that warrants review. Therefore, the EAB should deny NSB's request for review of this issue.

V. CONCLUSION

Petitioners have failed to demonstrate that EPA committed clear error and have failed to raise any important policy considerations on any of the grounds raised in the Petitions for Review. Accordingly, for the foregoing reasons, EPA respectfully requests the EAB to deny the Petitions for Review and uphold the OCS permits in their entirety.

Dated this 3rd day of August, 2007.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that copies of the forgoing EPA Response, in the matter of Shell Offshore, Inc., OCS Appeal Nos. 07-01 & 07-02, were sent to the following persons in the manner indicated:

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